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multiplexing and demultiplexing weights using received signal measurements. In this manner, the signals from the current active subscriber stations, some of which may be active on the same conventional channel, are separated and interference and noise suppressed. When communicating from the base station to the subscriber stations, an optimized multi-lobe antenna radiation pattern tailored to the current active subscriber station connections and interference situation is created. Suitable smart antenna technologies for achieving such a spatially directed beam are described, for example, in U.S. Patents Nos. 5,828,658, issued Oct. 27, 1998 to Ottersten et al. and 5,642,353, issued June 24, 1997 to Roy, III et al.

REMARK

Entry of the above-listed amendment is respectfully requested. It is respectfully submitted that no new matter has been introduced by this preliminary amendment.

Respectfully submitted,

BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

Date: 2/27/02

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Gordon R. Lindeen, III  
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2/27/02  
Date

**Marked Version to Show Changes Made**  
Insertions are underlined and deletions stricken.

**In the specification:**

**Please delete paragraph 16 and insert the following replacement paragraph in its place:**

A set of spatial multiplexing weights for each subscriber station are applied to the respective modulated signals to produce spatially multiplexed signals to be transmitted by the bank of four antennas. The host DSP 231 produces and maintains spatial signatures for each subscriber station for each conventional channel and calculates spatial multiplexing and demultiplexing weights using received signal measurements. In this manner, the signals from the current active subscriber stations, some of which may be active on the same conventional channel, are separated and interference and noise suppressed. When communicating from the base station to the subscriber stations, an optimized multi-lobe antenna radiation pattern tailored to the current active subscriber station connections and interference situation is created. ~~The same spatial signature is applied to signals received from the user terminal by the base station in order to resolve simultaneous signals on the same channel.~~ Suitable smart antenna technologies for achieving such a spatially directed beam are described, for example, in U.S. Patents Nos. 5,828,658, issued Oct. 27, 1998 to Ottersten et al. and 5,642,353, issued June 24, 1997 to Roy, III et al.